

ABSTRACT

Statistical data in Indonesia (Silalahi, 1995, in Irkas et al., 2020) states that unsafe actions contribute 80% and unsafe conditions contribute 20% to workplace accidents. The Grofwood Wood SME has working conditions that do not comply with the standards set forth in the Indonesian Ministry of Manpower Regulation No. 5 of 2018 and the Indonesian Ministry of Health Regulation No. 1077/MENKES/PER/V/2011, particularly in terms of noise, lighting, air circulation, and humidity, which constitute unsafe conditions, as well as unsafe actions by workers, which are unsafe actions that have the potential to cause Occupational Diseases (OD) and/or Workplace Accidents (WA). The study aims to propose preventive and mitigating actions to address potential threats and consequences using the Job Safety Analysis (JSA) method, the AS/NZS 4360:2004 risk assessment standard, and Bow Tie Analysis (BTA). The research results indicate that three out of 16 risks have the highest risk level based on the risk matrix, with 25 proposed preventive actions, five proposed mitigation actions, and 16 escalation factor (EF) barriers. The final results are visualized in a Bow Tie diagram, along with the design of a monitoring system for the activation status of the Bow Tie diagram. This is expected to assist the Grofwood Wood SME in recording, documenting, monitoring, and reviewing the proposed preventive and mitigating actions that can be implemented, thereby preventing the identified risks from occurring.

Keywords – Unsafe Condition, Unsafe Action, AS/NZS 4360:2004, Job Safety Analysis (JSA), Bow Tie Analysis (BTA).